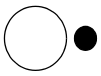
WelchAllyn

Solid State Procedure Headlight System
REF 49020, 49022, 49024, 49026

Part No. 460134 Rev. B

Symbol Description

	Attention: Consult user's Manual for additional information		Double Insulation
	Lamp On  Lamp Off		**INTENSE LIGHT:** Lamp is bright. Do not stare at the lamp when in use. May be harmful to eyes.

Warnings & Cautions

ATTENTION: Read Operating Manual for Warnings, Cautions, and Instructions for Use.

IPXØ: Not protected against the ingress of water.

WARNING: Solid State Procedure Headlight is not suitable for use in the presence of a flammable anesthetic mixture with air or oxygen or nitrous oxide. An explosion may result.

INTENSE LIGHT: Lamp is bright. Do not stare at the lamp when in use. May be harmful to eyes.

USE ONLY:
Solid State Procedure Headlight Power Source/Battery Charger and rechargeable battery pack supplied by Welch Allyn.

There are no user-serviceable parts inside the device except the rechargeable batteries and headband. Contact the Authorized Service Center listed at the end of this document for further assistance.

Guidelines for the safe use of the Solid State Portable Headlight

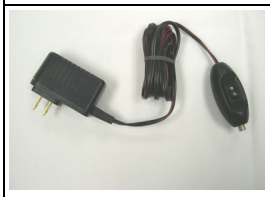
General practices to minimize risk of harm to the skin from optical radiation hazards include: minimizing illumination intensity at the tissue examination site, minimizing exposure times, and taking additional precautions when skin sensitivity has been altered through tissue trauma or the use of anesthesia.
General good practices to minimize risk of harm to the eyes from optical radiation hazards include: Avoiding looking at bright light sources and their reflections, and protect eyes where normal pupil sizes and aversion responses are not present.

Introduction

Thank you for purchasing the Solid State Portable Headlight by Welch Allyn, the worldwide leader in illuminated medical diagnostic instrumentation. By following the use and care guidelines supplied in this owner's manual, you will enjoy years of dependable, trouble-free service from your new headlight.

This headlight is designed to meet the various needs of a physicians' office, hospital environment, and specialist's office.Components

Standard Parts List Solid State Procedure Headlight with Direct Power Supply			
	Model 49020 (Domestic) Model 49022 (European) Model 49024 (U.K.) Model 49026 (Australia)		

Replacement Parts List When ordering replacement parts for your Solid State Procedure Headlight, please use the following numbers			
	Model 74180 Charger (Domestic) Model 74182 Charger (European) Model 74184 Charger (U.K.) Model 74186 Charger (Australia)		Model 72250 Replacement Battery
	Model 75270 Direct Power Supply (Domestic) Model 75272 Direct Power Supply (European) Model 75274 Direct Power Supply (U.K.) Model 75276 Direct Power Supply (Australia)		
Accessory Parts List			
	Model 49000 Procedure Headlight Model 49099 Carrying Case Model 72250 Rechargeable Battery		Model 75260 Battery Pack with Charger (Domestic) Model 75262 Battery Pack with Charger (European) Model 75264 Battery Pack with Charger (U.K.) Model 75266 Battery Pack with Charger (Australia)

Set-up and Operation

Instructions for Use

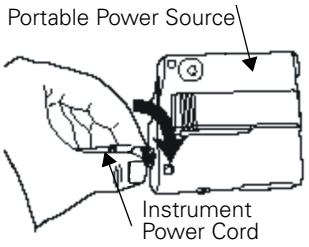
The Solid State Procedure Headlight (REF 49020), consisting of Procedure Headlight (REF 49000) with Direct Power Source (REF 75270), and Accessory Portable Power Source/Charger (REF 75260). The Solid State Procedure Headlight is designed to operate off the direct or the portable power source. To operate the headlight using the direct power source, follow the instructions and illustrations in the section labeled Direct Plug-In Transformer. Simply turn on the on/off switch located on the Direct Plug to operate the headlight. To operate the headlight using the portable power source, follow the instructions and illustrations under the section labeled "Connecting Headlight to Portabble Power Source".

To recharge the portable power source, follow the instructions and illustrations in the "Recharging the Portable Power source" section. To adjust the light spot size, turn the knob on the front section of the luminaire. To adjust the headband, simply rotate the adjustment knob located on the back of the headband.

Use the Solid State Procedure Headlight to provide illumination while performing a number of activities in the physician's office, hospital, or emergency environment such as minor surgery, general exam, foreign body removal, OB/GYN applications/procedures, dermatology examinations or any procedure which requires a small, homogenous, and well-defined spot...

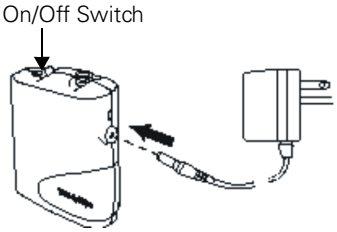
➡ Follow the assembly instructions listed below and the corresponding photographs.

Connecting Headlight to Portable Power Source



1. Plug the instrument power cord into the power cord connector port on the top of the power source.
2. Push in until it is firmly in place.
3. Gently screw the external connector sleeve clockwise to secure.Recharging the Portable Power Source

Recharging the Portable Power Source



1. Turn the portable power source off.
2. Disconnect instrument from power source.
3. Plug charging transformer into portable power source.
4. Plug charging transformer into wall socket. LED light indicates unit is charging.
5. Disconnect charging transformer from power source when fully charged, approximately 10 - 12 hours.

Maintenance

Each month examine cords and connections. The user can perform battery and/or headband replacement on an as needed basis. Return the unit to an authorized Welch Allyn Technical Service Department or distributor for additional servicing. See "Service and Warranty Information" section.

Cleaning (Recommended monthly)

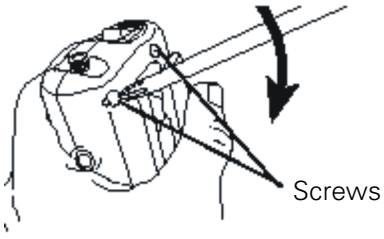
➡ Excess solution entering the luminaire assembly could damage internal components. Use caution to ensure cloth is not saturated with solution.

1. Unplug the unit prior to cleaning.
2. Wipe down the entire luminaire with a cloth slightly dampened with a mild solution of detergent.
3. Do not operate the light until the light is thoroughly dry.

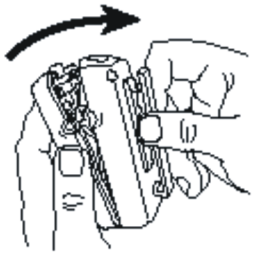
➡ **Do not sterilize the unit.**

CAUTION: Do not immerse in cleaning solutions.

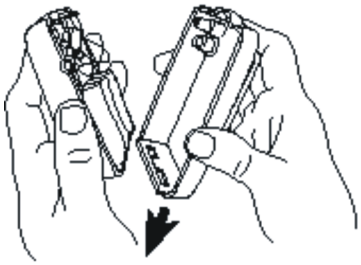
Battery Replacement



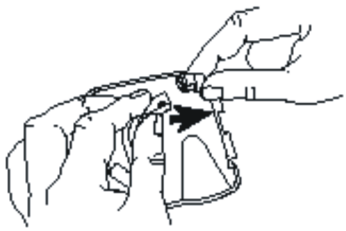
Step 1



Step 2



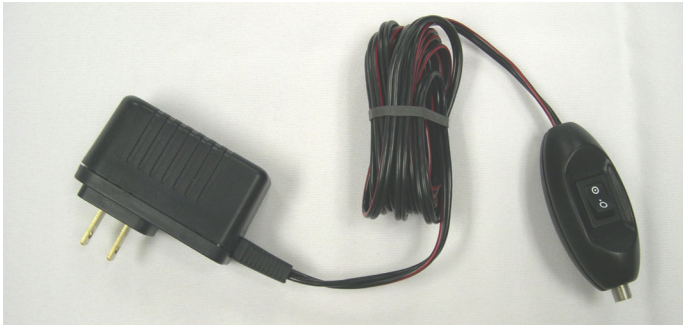
Step 3



Step 4

Direct Plug-In Transformer

1. Plug Power cord from the Solid State Procedure Headlight into the Direct Plug-In Power cord.
2. Push until firmly in place.
3. Gently screw the external connector sleeve clockwise to secure.
4. The instrument is now ready for use.
5. Plug direct power source into a nearby receptacle.



Troubleshooting

Trouble Area	Possible Cause	Corrective Action
No Light Output	Dead battery or battery not connected properly	Verify that the unit operates on direct power source. If yes, insure that the battery is connected properly; refer to the battery replacement section for instructions on connecting the battery. If the battery is connected properly, recharge or replace battery
Low Light Output	Low charge on battery	Verify that the unit operates on direct power source. If yes, recharge or replace battery

Specifications

Electrical

Ref Model	Input Voltage	Output Voltage	Leakage Current
49020	120VAC ± 50/60 Hz	5 volts vdc	<10 uA
49022	230VAC ± 50/60 Hz	5 volts vdc	<10 uA
49024	230VAC ± 50/60 Hz	5 volts vdc	<10 uA
49026	240VAC ± 50/60 Hz	5 volts vdc	<10 uA

Emissions and Immunity Information

Guidance and Manufacturer's Declaration - Emissions

The REF 49000 is intended for use in the electromagnetic environment specified below. The customer or user of the REF 49000 should ensure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment - Guideance
RF Emissions CISPR11	Group 1	The REF 49000 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.

Emissions Test	Compliance	Electromagnetic Environment - Guideance
RF Emissions CISPR11	Class B	
Harmonics IEC 61000-3-2	Class A	
Flicker IEC 61000-3-3	Complies	
		The REF 49000 is suitable for use in all establishments, including domestic, and those directly connected to the public low-voltage power supply network that supplies buidlings used for domestic purposes.

Radiated and Conducted Emissions were tested on the FRIWO 15.1504 power supply. It complies with the EN55022 Class B limits; same limits as EN55011 Group 1, Class B. Harmonics and Flicker testing were performed on a REF 46000 with a 230 VAC FRIWO 15.1504 power supply.

Guidance and Manufacturer's Declaration - Immunity

The REF 49000 is intended for use in the electromagnetic environment specified below. The customer or user of the REF 49000 should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
ESD IEC 61000-4-2	± 6kV Contact ± 8kV Air	± 8kV Contact ± 15kV Air	Floors should be wood, concrete, or ceramic tile. If floors are synthetic, the r/h should be at least 30%.
EFT IEC 61000-4-4	±2kV Mains ±1kV I/Os	±2kV ±2kV	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1kV Differential ±2kV Common	±2kV ±2kV	Mains power quality should be that of a typical commerical or hospital environment.
Voltage Dips/Dropout IEC 61000-4-11	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	Mains power quality should be that of a typical commerical or hospital environment.
Power Frequency 50/60Hz Magnetic Field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be that of a typical commerical or hospital environment.

Guidance and Manufacturer's Declaration - Immunity

The REF 49000 is intended for use in the electromagnetic environment specified below. The customer or user of the REF 49000 should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms (Ouside ISM) 10Vrms (In ISM Bands) 150 kHz to 80MHz 10 V/m 80 MHz to 2.5 GHz	10 Vrms 10 Vrms 10 V/m	Portable and mobile communications equipment should be separated from the REF 49000 by no less than the distances calculated/listed below: D=0.35 (Sqrt P) D=1.2 (Sqrt P) D=0.35 (Sqrt P) 80 to 800 MHz Where P is the max power in watts and D is the recommended separation distance in meters. Field strengths from fixed transmitters, as determined by an electromagnetic site survey, should be less than 10Vrms or 10V/m. Interference may occur in the vicinity of equipment containing a transmitter.

Conducted RFI and Radiated RFI testing was performed on a FRIWO 15.1504 power supply, monitoring the output for drops in voltage; none were detected.

Recommended Separations Distances between portable and mobile RF Communications equipment and the REF 49000

The REF 49000 is intended for use in the electromagnetic environment in which radiated disturbances are controlled. The customer or user of the REF 49000 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF Communications Equipment and the REF 49000 as recommended below, according to the maximum output power of the communications equipment

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Max Output Power (Watts)	Separation (m) 150kHz to 80MHz Non-ISM D=(3.5/V1) (Sprt P)	Separation (m) 150kHz to 80MHz ISM D=(12/V2) (Sprt P)	Separation (m) 80 to 800MHz D=(3.5/E1) (Sprt P)	Separation (m) 800MHz to 2.5GHz D=(7/E1) (Sprt P)
0.01	0.035	0.12	0.035	0.07
0.1	0.111	0.379	0.111	0.221
1	0.35	1.2	0.35	0.7
10	1.107	3.795	1.107	2.214
100	3.5	12.0	3.5	7.0

Dimensions

Headband Adjustment Range — Small, Medium, Large

Illumination System

5 watt Solid State Lamp

Color Temperature 5500 Degree Kelvin
50 Lumens
LED life > 10,000 hours
Working distance 16 inches
Spot size range 1.5 to 6 inches at the working distance

Weight

6 ounces

Environment

Operating: 32°F - +104°F (0°C - +40°C)
75% RH Max continuous
500 hPa - 1060 Altitude

Storage/Transport: -4°F - +120°F (-20°C -+49°C)
95% RH Max continuous
500 hPa - 1060 Altitude

Equipment Classification

Class II, Continuous Operation

IPXØ: Not protected against the ingress of water

Category: Not AP/APG Equipment

This device complies with current required standards for electromagnetic interference, and should not present problems to other equipment or be affected by other devices. As a precaution, avoid using this device in close proximity to other equipment.

Approvals	
C ETL LISTED US 74227	CERTIFIED TO: CAN/CSA STD C22.2 NO. 601.1 CONFORMS TO: IEC 60601-1,IEC 60601-1-2, UL STD 60601-1, AS/NZS 3200.1
CE	The CE mark on this product indicates that it has been tested to and conforms with the provisions noted within the 93/42/EEC Medical Device Directive. Authorized European Representative Address: European Regulatory Manager Welch Allyn Ltd., Navan Business Park Dublin Road Navan, County Meath, Republic of Ireland. Tel.: 353-46-90-67700 Fax: 353-46-90-67754

N344	Complies with EMC Framework of Australia
c UL us	**Power Sources** UL Recognized US/Canada UL2601-1, CAN/CSA C22.2 No. 601.1
DVE	VDE Certified IEC 60601-1, EN 60601-1, VDE 0750

Warranty

Instrumentation purchased new from Welch Allyn, Inc. (Welch Allyn) is warranted to be free from original defects in material and workmanship under normal use and service for a period of one year for the Solid State Procedure Headlight from the date of first shipment from Welch Allyn. This warranty shall be fulfilled by Welch Allyn or its authorized representative repairing or replacing at Welch Allyn's discretion, any such defect, free of charge for parts and labor.

Welch Allyn should be notified via telephone of any defective product and the item should be immediately returned, securely packaged and postage prepaid to Welch Allyn. Loss or damage in shipment shall be at the purchaser's risk.

Welch Allyn will not be responsible for loss associated with the use of any Welch Allyn product that (1) has had the serial number defaced, (2) has been repaired by anyone other than an authorized Welch Allyn Service Representative, (3) has been altered, or (4) has been used in a manner other than in accordance with the instructions.

Service Information

For Technical Support or to obtain return instructions, please contact the nearest Welch Allyn service center listed below:

USA Customers	**Canada Customers**	
Phone: (315) 685-4560 or (800) 535-6663 (North America only) Fax: (315) 685-3361	Phone: (905) 890-0004 or 1 (800) 561-8797 (North America only) Fax: (905) 890-0008	

INTERNATIONAL Customers		
Welch Allyn Germany Tel: (+49) 7477-927-170 Fax: (+49) 7477-927-170	**Welch Allyn Australia** Tel: (+61) 2-9638-3000 Fax: (+61) 2-9638-3500	**Latin America** Tel: (305) 669-9003 Fax: (305) 669-8951
Welch Allyn Ltd. Singapore Tel: (+65) 6291-0882 Fax: (+65) 6291-5780	**Welch Allyn UK Ltd.** CublingtonRoad Aston Abbotts Buckinghamshire England HP22 4ND Tel: 0-207-365-6780 Fax: 0-207-365-9694	**Welch Allyn China** Tel: (+86) 21-6327-9631 Fax: (+86) 21-6327-9632

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